Claims

What is claimed is:

1. A combination of a hot plug sliding connector and a circuit card for implementing hot plugging protection for regulator cards, power supply cards, system cards and the like, said combination comprising:

the circuit card having a respective isolation circuit coupled to each voltage input and voltage output of the circuit card to be connected to the hot plug sliding connector;

the hot plug sliding connector having an elongated slot for slidingly receiving the circuit card along the length of the elongated slot through the hot plug sliding connector;

both the sliding connector and the circuit card including a plurality of cooperating electrically connecting portions for mating engagement with the circuit card inserted into a final position in the hot plug sliding connector; one of said plurality of cooperating electrically connecting portions of the circuit card connected to one said respective isolation circuit; and

said plurality of cooperating electrically connecting portions of the sliding connector and the circuit card being spaced apart by a respective predefined null, non-electrically connecting portion arranged to avoid shorting between adjacent ones of said plurality of cooperating electrically connecting portions during the sliding insertion of the circuit card into the hot plug sliding connector.

2. A combination of a hot plug sliding connector and a circuit card for implementing hot plugging protection as recited in claim 1 wherein each said respective isolation circuit includes a series connected field effect transistor connected to one of said plurality of cooperating electrically connecting portions.

3. A combination of a hot plug sliding connector and a circuit card for implementing hot plugging protection as recited in claim 2 wherein said series connected field effect transistor includes an output ORing field effect transistor for limiting current flow for each voltage output of the circuit card.

4. A combination of a hot plug sliding connector and a circuit card for implementing hot plugging protection as recited in claim 2 wherein said series connected field effect transistor includes an input isolation field effect transistor for providing input over current protection for each voltage input of the circuit card.

5. A combination of a hot plug sliding connector and a circuit card for implementing hot plugging protection as recited in claim 1 wherein each said respective isolation circuit provides high impedance for said plurality of cooperating electrically connecting portions of the circuit card during the sliding insertion of the circuit card into the hot plug sliding connector.

6. A combination of a hot plug sliding connector and a circuit card for implementing hot plugging protection as recited in claim 1 wherein the circuit card includes an electrically connecting portion connected to ground potential on an opposing side of the circuit card from said plurality of cooperating electrically connecting portions of the circuit card.

7. A combination of a hot plug sliding connector and a circuit card for implementing hot plugging protection as recited in claim 6 wherein said elongated slot includes a cooperating electrically connecting portion connected to ground potential on an opposing slot side from said plurality of cooperating electrically connecting portions.

8. A combination of a hot plug sliding connector and a circuit card for implementing hot plugging protection as recited in claim 1 wherein selected ones of said plurality of cooperating electrically connecting portions near a front end of circuit card are connected to a highest current voltage, whereby a length of said predefined null, non-electrically connecting portions is minimized.

9. A method for implementing hot plugging protection for regulator cards, power supply cards, system cards and the like using a combination of a circuit card and a hot plug sliding connector having an elongated slot for slidingly receiving the circuit card along the length of the elongated slot through the hot plug sliding connector, said method comprising the steps of:

providing a plurality of cooperating electrically connecting portions carried by the circuit card and the sliding connector for mating engagement with the circuit card inserted into a final position in the hot plug sliding connector;

providing said plurality of cooperating electrically connecting portions of the sliding connector and the circuit card being spaced apart by a respective predefined null, non-electrically connecting portion arranged to avoid shorting between adjacent ones of said plurality of cooperating electrically connecting portions during the sliding insertion of the circuit card into the hot plug sliding connector; and

providing a respective isolation circuit coupled to respective voltage input and voltage outputs of the circuit card and connected to one of said plurality of cooperating electrically connecting portions of the circuit card.

10. A method for implementing hot plugging protection as recited in claim 9 wherein the step of providing said respective isolation circuit includes providing an output ORing field effect transistor for limiting current flow for each voltage output of the circuit card.

11. A method for implementing hot plugging protection as recited in claim 9 wherein the step of providing said respective isolation circuit includes providing an input isolation field effect transistor for providing input over current protection for each voltage input of the circuit card.

12. A method for implementing hot plugging protection as recited in claim 9 includes the step of connecting selected ones of said plurality of cooperating electrically connecting portions near a front end of circuit card to a highest current voltage.

13. A method for implementing hot plugging protection as recited in claim 9 includes the step of providing an electrically connecting portion connected to ground potential on an opposing side of the circuit card from said plurality of cooperating electrically connecting portions of the circuit card.

14. A method for implementing hot plugging protection as recited in claim 9 includes the step of providing an electrically connecting portion connected to ground potential on an opposing side of the elongated slot from said plurality of cooperating electrically connecting portions of the hot plug sliding connector.